

NIH...Turning Discovery Into Health

Progress in Heart, Lung, and Blood Research



Asthma

A few decades ago, we knew very little about asthma and still less about how to manage it. Most people couldn't pursue life's normal activities. This was especially difficult for children, who often had to forego routine playtime, and playing sports was unthinkable.

In the 1950s, scientists first learned that asthma symptoms were not just due to muscle tightening in the lungs triggered by environmental exposures, but were caused by underlying, chronic airway irritation and swelling. This insight led to successful anti-inflammation treatments that allowed doctors to prevent symptoms, and to tailor treatments to an individual's disease severity.

Another major advance was the development of inhalers that could deliver vaporized medicine — airway-opening drugs and steroids — directly to the lungs, thereby avoiding the need for a pill that can cause multiple side effects in other organs. In addition, educational research created effective programs that helped people manage their asthma by working in partnership with their doctor. Because of the NIH research investment, people with asthma now lead active lives at school, work, and play.

In recent years, NIH scientists have made important progress in asthma treatment in vulnerable populations, such as school-age children living in poor, urban areas across the United States. They have learned that when added to medical treatment, individualized, home-based

intervention programs — for instance, those that emphasize the use of mattress covers, air filters, and professional pest control — are cost-effective. Such tailored interventions reduce emergency-room visits, decrease asthma medication use, and improve the health of at-risk children.

Imagine the Future...

Interventions early in life — perhaps even before a child is born — prevent asthma from ever taking hold.

A protective vaccine, tailored to an individual's asthma triggers, eliminates the disease in those at risk.

The NIH's National Heart, Lung, and Blood Institute provides global leadership for research, training, and education programs to promote the prevention and treatment of heart, lung, and blood diseases and enhance the health of all individuals so that they can live longer and more fulfilling lives.
